

**CERTIFICATE OF FACSIMILE TRANSMISSION**

for

Attorney Docket Number: FSP0053  
Client Reference Number: AWS 742.US  
Title: DETECTING A LOSS OF KEY STREAM SYNCHRONIZATION IN A COMMUNICATION SYSTEM  
Application Number: 09/783,843  
Filing Date: Thursday, February 15, 2001  
First Named Inventor: Reeds III, James A.  
Group Art Unit: 2132  
Examiner Name: Dinh, Minh

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I hereby certify that the following is being transmitted via facsimile to telephone number 571-273-8300 on Monday, August 01, 2005.

Signature:

Printed name: Charles A. Mirho



**Contents of This Correspondence**

5 pages of amendment and reply to office action  
1 page of Certificate of facsimile  
1 page of Request for continued examination  
1 page of Fee transmittal to PTO

Authorization to debit deposit account for \$790 dollars.

**FEE TRANSMITTAL**

for

Attorney Docket Number: FSP0053  
Client Reference Number: AWS 742.US  
Title: DETECTING A LOSS OF KEY STREAM SYNCHRONIZATION IN A COMMUNICATION  
SYSTEM  
Application Number: 09/783,843  
Filing Date: Thursday, February 15, 2001  
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Group Art Unit: 2132  
Examiner Name: Dinh, Minh

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TOTAL FEE: \$790 dollars

This fee includes:

USPTO statutory fee for filing a request for continued examination: \$790

Payment is made by Authorization to debit deposit account for \$790 dollars. PLEASE NOTE  
**FSP0053** AS THE ATTORNEY DOCKET NUMBER ASSOCIATED WITH THIS TRANSACTION.

Charge unpaid fees and credit overpayments to deposit account 501691. PLEASE NOTE  
**FSP0053** AS THE ATTORNEY DOCKET NUMBER ASSOCIATED WITH THIS TRANSACTION  
ON THE DEPOSIT ACCOUNT STATEMENT.

Submitted by:

Signature /Charles A. Mirho/  
Charles A. Mirho  
Reg. 41,199  
Attorney for Applicant

Date: Monday, August 01, 2005

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**RECEIVED  
CENTRAL FAX CENTER****AUG 01 2005****FAX COVER SHEET****TO****COMPANY****FAX NUMBER 17038729306****FROM charles mirho****DATE 2005-08-01 18:43:00 GMT****RE FSP0053 Application Number: 09/783,843  
Amendment/RCE****COVER MESSAGE****Attorney Docket Number: FSP0053****Client Reference Number: AWS 742.US****Title: DETECTING A LOSS OF KEY STREAM SYNCHRONIZATION IN A  
COMMUNICATION SYSTEM****Application Number: 09/783,843****Filing Date: Thursday, February 15, 2001****First Named Inventor: Reeds III, James A.****Group Art Unit: 2132****Examiner Name: Dinh, Minh****RECEIVED  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,843	02/15/2001	James Alexander Reeds III	1999-0274	2575

7590

05/02/2005

Charles A Mirho  
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Vancouver, WA 98660

EXAMINER

DINH, MINH

ART UNIT

PAPER NUMBER

2132

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/783,843	Applicant(s) REEDS ET AL
	Examiner Minh Dinh	Art Unit 2132

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.135(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.

If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any granted patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 14 January 2005

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 29-36 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 29-36 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 15 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some \* c) ☐ None of:

1) ☐ Certified copies of the priority documents have been received.

2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_

3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SF-09)

Paper No(s)/Mail Date \_\_\_\_\_

4) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date \_\_\_\_\_

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other \_\_\_\_\_

PTOL-326 (Rev. 1-04)

Office Action Summary

Part of Paper No./Mail Date 20050427

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## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to the amendment filed 01/14/2005. Claims 1-28 have been canceled; claims 29-36 have been added.

### ***Response to Arguments***

2. Applicant's arguments filed 01/14/2005 have been fully considered but they are not persuasive. Applicant argues that Lockhart does not teach the comparison of checksums for the purpose of detecting loss of stream cipher synchronization (page 4, 2<sup>nd</sup> paragraph). Lockhart teaches comparing reference values that are checksums of transmitted data packets to detect loss of cipher synchronization (fig. 2; col. 4, lines 54-66; col. 2, lines 25-31). Regarding applicant's arguments that Lockhart would not anticipated the present claims and that Lockhart's teaching wastes bandwidth and requires additional information to be transmitted with the encrypted payload (page 5, 2<sup>nd</sup> par.), applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant argues that none of the references teaches detecting the loss of cipher synchronization at a layer other than the layer that provides cryptography. It is established in the previous Office action that checksums are used to detect loss of cipher synchronization and that checksum calculation and comparisons is performed at the network layer which is different from sub-network layer that provides cryptography.

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***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lockhart et al. (5,841,873) in view of Ahmed et al. (6,747,961) and Menezes et al. ("Handbook of Applied Cryptography").

Regarding claim 29, Lockhart discloses a method comprising: decrypting an encrypted data packet to produce a decrypted data packet (fig. 2, step 215); calculating a calculated checksum for the decrypted data packet (fig. 2, step 221; col. 4, lines 54-66; col. 5, lines 46-65); comparing a checksum extracted from the decrypted data packet with the calculated checksum (fig. 2, step 221); and detecting a loss of cipher synchronization if the calculated checksum does not match the checksum extracted from the decrypted data packet (fig. 2, step 300; col. 2, lines 25-31).

Lockhart does not disclose a security sub-network layer performing decryption. Ahmed discloses a security sub-network layer located below a network layer and above the MAC layer, the security sub-network layer providing encryption/decryption function to a network layer (col. 3, lines 53-59; fig. 3B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the security sub-network layer of Ahmed into the method of Lockhart, the sub-network layer

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providing encryption/decryption function to a network layer. Such a sub-network protocol layer provides the communication systems with various mobility management functions (col. 3, lines 59-63).

Lockhart does not disclose that the encryption algorithm is a stream cipher. Menezes discloses using stream ciphers (p. 161, see 6.1 Introduction). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Lockhart to use a stream cipher, as taught by Menezes, because stream ciphers are advantageous in situations where transmission errors are highly probable.

Regarding claims 30-34, Lockhart does not disclose calculating the calculated checksum at a network layer. However, Examiner takes Official Notice that using Transmission Control Protocol (TCP), which is part of a network layer (specification page 6, lines 22-24), to determine the integrity of a transmitted payload is well known in the art. In particular, the transmitting TCP calculates a checksum based on the payload data to be transmitted and includes the checksum in the TCP header for transmission; the receiving TCP then performs the same calculation on the payload data received and compares the result with the received checksum; a discrepancy indicates some error. It would have been obvious at the time of the invention was made to one of ordinary skill in the art to calculate the calculated checksum at a network layer since Examiner takes Official Notice that using TCP to determine the integrity of a transmitted payload data is well known in the art. Since Lockhart teaches comparing the checksums to detect the loss of cipher synchronization, it would be obvious to use the network layer, which



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compares the checksums to detect errors, to detect the loss of cipher synchronization. Accordingly, the checksums are for a network layer data payload and that the extracted checksum is extracted from the network layer header.

Regarding claim 35, Lockhart further discloses resetting a lower layer if the calculated checksum does not match the checksum extracted from the decrypted data packet (fig. 3, step 317), resetting a lower layer meets the limitation of re-synchronization.

Regarding claim 36, please refer to the discussion of using TCP to determine the integrity of a transmitted payload data above.

#### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dinh whose telephone number is 571-272-3802. The examiner can normally be reached on Mon-Fri: 10:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MD

Minh Dinh  
Examiner  
Art Unit 2132

MD  
4/27/05



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